```
SEQUENCE LISTING
<120> HUMAN PEPTIDES/PROTEINS CAUSING OR LEADING TO THE
      KILLING OF CELLS INCLUDING LYMPHOID TUMOR CELLS
<130> GPCG-P01-003
<140> 10/001,934
<141> 2001-11-15
<160> 63
<170> PatentIn Ver. 2.1
<210> 1
<211> 10
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: CDR3 consensus
      sequence
<220>
<221> MOD RES
<222> (1)..(4)
<223> Any amino acid
<220>
<221> MOD RES
<222> (7)
<223> Any amino acid
<220>
<221> MOD RES
<222> (10)
<223> Any amino acid
<400> 1
Xaa Xaa Xaa Arg Gly Xaa Phe Asp Xaa
                                      10
                  5
  1
<210> 2
<211> 8
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: CDR3 consensus
      sequence
<220>
<221> MOD RES
<222> (5)..(8)
<223> Any amino acid
```

<400> 2

```
Gln Ser Tyr Asp Xaa Xaa Xaa
                  5
<210> 3
<211> 9
<212> PRT
<213> Homo sapiens
<400> 3
Ser Pro Arg Tyr Gly Ala Phe Asp Tyr
  1
<210> 4
<211> 8
<212> PRT
<213> Homo sapiens
<400> 4
Gln Ser Tyr Asp Leu Ile Arg His
  1
<210> 5
<211> 8
<212> PRT
<213> Homo sapiens
<400> 5
Gln Ser Tyr Asp Met Asn Val His
  1
                  5
<210> 6
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: CDR1 consensus
      sequence
<220>
<221> MOD RES
<222> (4)..(5)
<223> Any amino acid
<220>
<221> MOD RES
<222> (9)
<223> Any amino acid
<220>
<221> MOD RES
<222> (13)
<223> Any amino acid
<400> 6
Ser Gly Ser Xaa Xaa Asn Ile Gly Xaa Asn Tyr Val Xaa
```

```
10
<210>
          & TRADEM
<211> 13
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: CDR1 consensus
      sequence
<400> 7
Ser Gly Ser Glu Ser Asn Ile Gly Asn Asn Tyr Val Gln
                                      10
  1
<210> 8
<211> 8
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic
      STREP tag
<400> 8
Trp Ser His Pro Gln Phe Glu Lys
  1
<210> 9
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Synthetic FLAG
      tag
<400> 9
Asp Tyr Lys Asp
  1
<210> 10
<211> 17
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Primer
<400> 10
gtggtggttc cgatatc
                                                                    17
<210> 11
<211> 44
<212> DNA
```

```
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Primer
<400> 11
agcgtcacac tcggtgcggc tttcggctgg ccaagaacgg gtta
                                                                    44
<210> 12
<211> 13
<212> PRT
<213> Homo sapiens
<400> 12
Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn Tyr Val Ser
  1
                  5
                                      10
<210> 13
<211> 13
<212> PRT
<213> Homo sapiens
<400> 13
Ser Gly Ser Glu Ser Asn Ile Gly Ser Asn Tyr Val His
  1
                                      10
<210> 14
<211> 13
<212> PRT
<213> Homo sapiens
<400> 14
Ser Gly Ser Glu Ser Asn Ile Gly Ser Asn Tyr Val Ala
  1
<210> 15
<211> 13
<212> PRT
<213> Homo sapiens
<400> 15
Ser Gly Ser Asp Ser Asn Ile Gly Ala Asn Tyr Val Thr
                                      10
<210> 16
<211> 13
<212> PRT
<213> Homo sapiens
<400> 16
Ser Gly Ser Glu Pro Asn Ile Gly Ser Asn Tyr Val Phe
  1
                                      10
<210> 17
```

```
<211> 13
<212> PRT
<213> Homo sapiens
<400> 17
Ser Gly Ser Glu Ser Asn Ile Gly Asn Asn Tyr Val Gly
<210> 18
<211> 13
<212> PRT
<213> Homo sapiens
<400> 18
Ser Gly Ser Glu Ser Asn Ile Gly Ala Asn Tyr Val Asn
                  5
  1
                                      10
<210> 19
<211> 10
<212> PRT
<213> Homo sapiens
<400> 19
Gln Tyr Gly His Arg Gly Gly Phe Asp His
                                      10
<210> 20
<211> 9
<212> PRT
<213> Homo sapiens
<400> 20
Gly Tyr Gly Arg Tyr Ser Pro Asp Leu
<210> 21
<211> 8
<212> PRT
<213> Homo sapiens
<400> 21
Gln Gln Tyr Ser Asn Leu Pro Phe
  1
<210> 22
<211> 8
<212> PRT
<213> Homo sapiens
<400> 22
Gln Ser Tyr Asp Met Pro Gln Ala
  1
<210> 23
```

```
<211> 8
<212> PRT
<213> Homo sapiens
<400> 23
Gln Ser Tyr Asp Leu Thr Met Gly
<210> 24
<211> 8
<212> PRT
<213> Homo sapiens
<400> 24
Gln Ser Tyr Asp Phe Ser His Tyr
  1
<210> 25
<211> 8
<212> PRT
<213> Homo sapiens
<400> 25
Gln Ser Tyr Asp Ile Gln Leu His
  1
<210> 26
<211> 8
<212> PRT
<213> Homo sapiens
<400> 26
Gln Ser Tyr Asp Phe Ser Val Tyr
  1
<210> 27
<211> 8
<212> PRT
<213> Homo sapiens
<400> 27
Gln Ser Tyr Asp Phe Ser Ile Tyr
<210> 28
<211> 13
<212> PRT
<213> Homo sapiens
<400> 28
Ser Gly Ser Glu Pro Asn Ile Gly Ser Asn Tyr Val Phe
                                      10
  1
<210> 29
```

```
<211> 13
<212> PRT
<213> Homo sapiens
<400> 29
Ser Gly Ser Glu Ser Asn Ile Gly Ala Asn Tyr Val Thr
<210> 30
<211> 13
<212> PRT
<213> Homo sapiens
<400> 30
Ser Gly Ser Glu Ser Asn Ile Gly Ser Asn Tyr Val Ser
  1
                  5
                                     10
<210> 31
<211> 13
<212> PRT
<213> Homo sapiens
<400> 31
Ser Gly Ser Glu Ser Asn Ile Gly Asn Asn Tyr Val Gly
                                     10
<210> 32
<211> 13
<212> PRT
<213> Homo sapiens
<400> 32
Ser Gly Ser Glu Ser Asn Ile Gly Ala Asn Tyr Val Asn
<210> 33
<211> 3548
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Vector
      pMORPH13 scFv
<400> 33
agagcatgcg taggagaaaa taaaatgaaa caaagcacta ttgcactggc actcttaccg 60
ttgctcttca cccctgttac caaagccgac tacaaagatg aagtgcaatt ggttcagtct 120
ggcgcggaag tgaaaaaacc gggcagcagc gtgaaagtga gctgcaaagc ctccggaggc 180
acttttagca gctatgcgat tagctgggtg cgccaagccc ctgggcaggg tctcgagtgg 240
atgggcggca ttattccgat ttttggcacg gcgaactacg cgcagaagtt tcagggccgg 300
gtgaccatta ccgcggatga aagcaccagc accgcgtata tggaactgag cagcctgcgt 360
agcgaagata cggccgtgta ttattgcgcg cgttattatg atcgtatgta taatatggat 420
tattggggcc aaggcaccct ggtgacggtt agctcagcgg gtggcggttc tggcggcggt 480
gggagcggtg gcggtggttc tggcggtggt ggttccgata tcgaactgac ccagccgcct 540
tcagtgagcg ttgcaccagg tcagaccgcg cgtatctcgt gtagcggcga tgcgctgggc 600
gataaatacg cgagctggta ccagcagaaa cccgggcagg cgccagttct ggtgatttat 660
```

```
gatgattctg accgtccctc aggcatcccg gaacgcttta gcggatccaa cagcggcaac 720
accgcgaccc tgaccattag cggcactcag gcggaagacg aagcggatta ttattgccag 780
agctatgacg ctcatatgcg tcctgtgttt ggcggcggca cgaagttaac cgttcttggc 840
caggaattcg agcagaagct gatctctgag gaggatctga actagggtgg tggctctggt 900
tccggtgatt ttgattatga aaagatggca aacgctaata agggggctat gaccgaaaat 960
gccgatgaaa acgcgctaca gtctgacgct aaaggcaaac ttgattctgt cgctactgat 1020
tacggtgctg ctatcgatgg tttcattggt gacgtttccg gccttgctaa tggtaatggt 1080
gctactggtg attttgctgg ctctaattcc caaatggctc aagtcggtga cggtgataat 1140
tcacctttaa tgaataattt ccgtcaatat ttaccttccc tccctcaatc ggttgaatgt 1200
cgcccttttg tctttggcgc tggtaaacca tatgaatttt ctattgattg tgacaaaata 1260
aacttattcc gtggtgtctt tgcgtttctt ttatatgttg ccacctttat gtatgtattt 1320
tctacgtttg ctaacatact gcgtaataag gagtcttgat aagcttgacc tgtgaagtga 1380
aaaatggcgc agattgtgcg acatttttt tgtctgccgt ttaatgaaat tgtaaacgtt 1440
aatattttgt taaaattcgc gttaaatttt tgttaaatca gctcattttt taaccaatag 1500
gccgaaatcg gcaaaatccc ttataaatca aaagaataga ccgagatagg gttgagtgtt 1560
gttccagttt ggaacaagag tccactatta aagaacgtgg actccaacgt caaagggcga 1620
aaaaccgtct atcagggcga tggcccacta cgagaaccat caccctaatc aagttttttg 1680
gggtcgaggt gccgtaaagc actaaatcgg aaccctaaag ggagcccccg atttagagct 1740
tgacggggaa agccggcgaa cgtggcgaga aaggaaggga agaaagcgaa aggagcgggc 1800
getagggege tggcaagtgt ageggteaeg etgegegtaa eeaecaeae egeegegett 1860
aatgcgccgc tacagggcgc gtgctagcca tgtgagcaaa aggccagcaa aaggccagga 1920
accgtaaaaa ggccgcgttg ctggcgtttt tccataggct ccgccccct gacgagcatc 1980
acaaaaatcg acgctcaagt cagaggtggc gaaacccgac aggactataa agataccagg 2040
cgtttccccc tggaagctcc ctcgtgcgct ctcctgttcc gaccctgccg cttaccggat 2100
acctgtccgc ctttctccct tcgggaagcg tggcgctttc tcatagctca cgctgtaggt 2160
atctcagttc ggtgtaggtc gttcgctcca agctgggctg tgtgcacgaa ccccccgttc 2220
agtccgaccg ctgcgcctta tccggtaact atcgtcttga gtccaacccg gtaagacacg 2280
acttatcgcc actggcagca gccactggta acaggattag cagagcgagg tatgtaggcg 2340
gtgctacaga gttcttgaag tggtggccta actacggcta cactagaaga acagtatttg 2400
gtatctgcgc tctgctgtag ccagttacct tcggaaaaag agttggtagc tcttgatccg 2460
gcaaacaaac caccgctggt agcggtggtt tttttgtttg caagcagcag attacgcgca 2520
gaaaaaaagg atctcaagaa gatcctttga tcttttctac ggggtctgac gctcagtgga 2580
acgaaaactc acgttaaggg attttggtca gatctagcac caggcgttta agggcaccaa 2640
taactgcctt aaaaaaatta cgccccgccc tgccactcat cgcagtactg ttgtaattca 2700
ttaagcattc tgccgacatg gaagccatca caaacggcat gatgaacctg aatcgccagc 2760
ggcatcagca ccttgtcgcc ttgcgtataa tatttgccca tagtgaaaac gggggcgaag 2820
aagttgtcca tattggctac gtttaaatca aaactggtca aactcaccca gggattggct 2880
gagacgaaaa acatattctc aataaaccct ttagggaaat aggccaggtt ttcaccgtaa 2940
cacgccacat cttgcgaata tatgtgtaga aactgccgga aatcgtcgtg gtattcactc 3000
cagagegatg aaaacgtttc agtttgctca tggaaaacgg tgtaacaagg gtgaacacta 3060
tcccatatca ccagctcacc gtctttcatt gccatacgga actccgggtg agcattcatc 3120
aggcgggcaa gaatgtgaat aaaggccgga taaaacttgt gcttattttt ctttacggtc 3180
tttaaaaagg ccgtaatatc cagctgaacg gtctggttat aggtacattg agcaactgac 3240
tgaaatgcct caaaatgttc tttacgatgc cattgggata tatcaacggt ggtatatcca 3300
gtgatttttt tctccatttt agcttcctta gctcctgaaa atctcgataa ctcaaaaaat 3360
acgcccggta gtgatcttat ttcattatgg tgaaagttgg aacctcaccc gacgtctaat 3420
gtgagttagc tcactcatta ggcaccccag gctttacact ttatgcttcc ggctcgtatg 3480
ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa acagctatga ccatgattac 3540
gaatttct
                                                                  3548
<210> 34
<211> 4410
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Vector
     pMx7 FS 5D2
```

<400> 34 tctagagcat gcgtaggaga aaataaaatg aaacaaagca ctattgcact ggcactctta 60 ccgttgctct tcacccctgt taccaaagcc gactacaaag atgaagtgca attggtggaa 120 ageggeggeg geetggtgea acegggegge ageetgegte tgagetgege ggeeteegga 180 tttaccttta gcagctatgc gatgagctgg gtgcgccaag cccctgggaa gggtctcgag 240 tgggtgagcg cgattagcgg tagcggcggc agcacctatt atgcggatag cgtgaaaggc 300 cgttttacca tttcacgtga taattcgaaa aacaccctgt atctgcaaat gaacagcctg 360 cgtgcggaag atacggccgt gtattattgc gcgcgtgtta agaagcattt ttctcgtaag 420 aattggtttg attattgggg ccaaggcacc ctggtgacgg ttagctcagc gggtggcggt 480 tctggcggcg gtgggagcgg tggcggtggt tctggcggtg gtggttccga tatcgtgatg 540 acccagagee caetgageet gecagtgaet eegggegage etgegageat tagetgeaga 600 agcagccaaa gcctgctgca tagcaacggc tataactatc tggattggta ccttcaaaaa 660 ccaggtcaaa gcccgcagct attaatttat ctgggcagca accgtgccag tggggtcccg 720 gatcgtttta gcggctctgg atccggcacc gattttaccc tgaaaattag ccgtgtggaa 780 gctgaagacg tgggcgtgta ttattgccag cagcattata ccaccccgcc gacctttggc 840 cagggtacga aagttgaaat taaacgtacg gaattcgact ataaagatga cgatgacaaa 900 ggcgcgccgt ggagccaccc gcagtttgaa aaatgataag cttgacctgt gaagtgaaaa 960 atggcgcaga ttgtgcgaca ttttttttgt ctgccgttta attaaagggg gggggggcc 1020 ggcctggggg ggggtgtaca tgaaattgta aacgttaata ttttgttaaa attcgcgtta 1080 aatttttgtt aaatcagctc attttttaac caataggccg aaatcggcaa aatcccttat 1140 aaatcaaaag aatagaccga gatagggttg agtgttgttc cagtttggaa caagagtcca 1200 ctattaaaga acgtggactc caacgtcaaa gggcgaaaaa ccgtctatca gggcgatggc 1260 ccactacgag aaccatcacc ctaatcaagt tttttggggt cgaggtgccg taaagcacta 1320 aatcggaacc ctaaagggag cccccgattt agagcttgac ggggaaagcc ggcgaacgtg 1380 gcgagaaagg aagggaagaa agcgaaagga gcgggcgcta gggcgctggc aagtgtagcg 1440 gtcacgctgc gcgtaaccac cacacccgcc gcgcttaatg cgccgctaca gggcgcgtgc 1500 tagactagtg tttaaaccgg accggggggg ggcttaagtg ggctgcaaaa caaaacggcc 1560 tcctgtcagg aagccgcttt tatcgggtag cctcactgcc cgctttccag tcgggaaacc 1620 tgtcgtgcca gctgcatcag tgaatcggcc aacgcgcggg gagaggcggt ttgcgtattg 1680 ggagccaggg tggtttttct tttcaccagt gagacgggca acagctgatt gcccttcacc 1740 gcctggccct gagagagttg cagcaagcgg tccacgctgg tttgccccag caggcgaaaa 1800 tcctgtttga tggtggtcag cggcgggata taacatgagc tgtcctcggt atcgtcgtat 1860 cccactaccg agatgtccgc accaacgcgc agcccggact cggtaatggc acgcattgcg 1920 cccagcgcca tctgatcgtt ggcaaccagc atcgcagtgg gaacgatgcc ctcattcagc 1980 atttgcatgg tttgttgaaa accggacatg gcactccagt cgccttcccg ttccgctatc 2040 ggctgaattt gattgcgagt gagatattta tgccagccag ccagacgcag acgcgccgag 2100 acagaactta atgggccagc taacagcgcg atttgctggt ggcccaatgc gaccagatgc 2160 tccacgccca gtcgcgtacc gtcctcatgg gagaaaataa tactgttgat gggtgtctgg 2220 tcagagacat caagaaataa cgccggaaca ttagtgcagg cagcttccac agcaatagca 2280 tcctggtcat ccagcggata gttaataatc agcccactga cacgttgcgc gagaagattg 2340 tgcaccgccg ctttacaggc ttcgacgccg cttcgttcta ccatcgacac gaccacgctg 2400 gcacccagtt gatcggcgcg agatttaatc gccgcgacaa tttgcgacgg cgcgtgcagg 2460 gccagactgg aggtggcaac gccaatcagc aacgactgtt tgcccgccag ttgttgtgcc 2520 acgcggttag gaatgtaatt cagctccgcc atcgccgctt ccactttttc ccgcgttttc 2580 gcagaaacgt ggctggcctg gttcaccacg cgggaaacgg tctgataaga gacaccggca 2640 tactctgcga catcgtataa cgttactggt ttcacattca ccaccctgaa ttgactctct 2700 tccgggcgct atcatgccat accgcgaaag gttttgcgcc attcgatgct agccatgtga 2760 gcaaaaggcc agcaaaaggc caggaaccgt aaaaaggccg cgttgctggc gtttttccat 2820 aggeteegee eecetgaega geateacaaa aategaeget caagteagag gtggegaaac 2880 ccgacaggac tataaagata ccaggcgttt ccccctggaa gctccctcgt gcgctctcct 2940 gttccgaccc tgccgcttac cggatacctg tccgcctttc tcccttcggg aagcgtggcg 3000 ctttctcata gctcacgctg taggtatctc agttcggtgt aggtcgttcg ctccaagctg 3060 ggctgtgtgc acgaacccc cgttcagccc gaccgctgcg ccttatccgg taactatcgt 3120 cttgagtcca acccggtaag acacgactta tcgccactgg cagcagccac tggtaacagg 3180 attagcagag cgaggtatgt aggcggtgct acagagttct tgaagtggtg gcctaactac 3240 ggctacacta gaagaacagt atttggtatc tgcgctctgc tgtagccagt taccttcgga 3300 aaaagagttg gtagctcttg atccggcaaa caaaccaccg ctggtagcgg tggttttttt 3360 gtttgcaagc agcagattac gcgcagaaaa aaaggatctc aagaagatcc tttgatcttt 3420 tctacggggt ctgacgctca gtggaacgaa aactcacgtt aagggatttt ggtcagatct 3480 agcaccagge gtttaaggge accaataact gccttaaaaa aattacgccc cgccctgcca 3540

```
ctcatcgcag tactgttgta attcattaag cattctgccg acatggaagc catcacaaac 3600
ggcatgatga acctgaatcg ccagcggcat cagcaccttg tcgccttgcg tataatattt 3660
gcccatagtg aaaacggggg cgaagaagtt gtccatattg gctacgttta aatcaaaact 3720
ggtgaaactc acccagggat tggctgagac gaaaaacata ttctcaataa accctttagg 3780
gaaataggcc aggttttcac cgtaacacgc cacatcttgc gaatatatgt gtagaaactg 3840
ccggaaatcg tcgtggtatt cactccagag cgatgaaaac gtttcagttt gctcatggaa 3900
aacggtgtaa caagggtgaa cactatccca tatcaccagc tcaccgtctt tcattgccat 3960
acggaactcc gggtgagcat tcatcaggcg ggcaagaatg tgaataaagg ccggataaaa 4020
cttgtgctta tttttcttta cggtctttaa aaaggccgta atatccagct gaacggtctg 4080
gttataggta cattgagcaa ctgactgaaa tgcctcaaaa tgttctttac gatgccattg 4140
ggatatatca acggtggtat atccagtgat ttttttctcc attttagctt ccttagctcc 4200
tgaaaatctc gataactcaa aaaatacgcc cggtagtgat cttatttcat tatggtgaaa 4260
gttggaacct cacccgacgt ctaatgtgag ttagctcact cattaggcac cccaggcttt 4320
acactttatg cttccggctc gtatgttgtg tggaattgtg agcggataac aatttcacac 4380
aggaaacagc tatgaccatg attacgaatt
                                                                 4410
<210> 35
<211> 5020
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Vector
     pMx9 Fab GPC8
<400> 35
atcgtgctga cccagccgcc ttcagtgagt ggcgcaccag gtcagcgtgt gaccatctcg 60
tgtagcggca gcagcagcaa cattggcagc aactatgtga gctggtacca gcagttgccc 120
gggacggcgc cgaaactgct gatttatgat aacaaccagc gtccctcagg cgtgccggat 180
cgttttagcg gatccaaaag cggcaccagc gcgagccttg cgattacggg cctgcaaagc 240
gaagacgaag cggattatta ttgccagagc tatgacatgc ctcaggctgt gtttggcggc 300
ggcacgaagt ttaaccgttc ttggccagcc gaaagccgca ccgagtgtga cgctgtttcc 360
gccgagcagc gaagaattgc aggcgaacaa agcgaccctg gtgtgcctga ttagcgactt 420
ttatccggga gccgtgacag tggcctggaa ggcagatagc agccccgtca aggcgggagt 480
ggagaccacc acaccctcca aacaaagcaa caacaagtac gcggccagca gctatctgag 540
cctgacgcct gagcagtgga agtcccacag aagctacagc tgccaggtca cgcatgaggg 600
gagcaccgtg gaaaaaaccg ttgcgccgac tgaggcctga taagcatgcg taggagaaaa 660
taaaatgaaa caaagcacta ttgcactggc actcttaccg ttgctcttca cccctgttac 720
caaagcccag gtgcaattga aagaaagcgg cccggccctg gtgaaaccga cccaaaccct 780
gaccetgace tgtacetttt eeggatttag eetgteeaeg tetggegttg gegtgggetg 840
gattcgccag ccgcctggga aagccctcga gtggctggct ctgattgatt gggatgatga 900
taagtattat agcaccagcc tgaaaacgcg tctgaccatt agcaaagata cttcgaaaaa 960
tcaggtggtg ctgactatga ccaacatgga cccggtggat acggccacct attattgcgc 1020
gcgttctcct cgttatcgtg gtgcttttga ttattggggc caaggcaccc tggtgacggt 1080
tageteageg tegaceaaag gteeaagegt gttteegetg geteegagea geaaaageae 1140
cagcggcggc acggctgccc tgggctgcct ggttaaagat tatttcccgg aaccagtcac 1200
cgtgagctgg aacagcgggg cgctgaccag cggcgtgcat acctttccgg cggtgctgca 1260
aagcagcggc ctgtatagcc tgagcagcgt tgtgaccgtg ccgagcagca gcttaggcac 1320
tcagacctat atttgcaacg tgaaccataa accgagcaac accaaagtgg ataaaaaagt 1380
ggaaccgaaa agcgaattcg actataaaga tgacgatgac aaaggcgcgc cgtggagcca 1440
cccgcagttt gaaaaatgat aagcttgacc tgtgaagtga aaaatggcgc agattgtgcg 1500
acatgaaatt gtaaacgtta atattttgtt aaaattcgcg ttaaattttt gttaaatcag 1620
ctcatttttt aaccaatagg ccgaaatcgg caaaatccct tataaatcaa aagaatagac 1680
cgagataggg ttgagtgttg ttccagtttg gaacaagagt ccactattaa agaacgtgga 1740
ctccaacgtc aaagggcgaa aaaccgtcta tcagggcgat ggcccactac gagaaccatc 1800
accctaatca agttttttgg ggtcgaggtg ccgtaaagca ctaaatcgga accctaaagg 1860
gagcccccga tttagagctt gacggggaaa gccggcgaac gtggcgagaa aggaagggaa 1920
gaaagcgaaa ggagcgggcg ctagggcgct ggcaagtgta gcggtcacgc tgcgcgtaac 1980
```

```
caccacaccc gccgcgctta atgcgccgct acagggcgcg tgctagacta gtgtttaaac 2040
cggaccgggg gggggcttaa gtgggctgca aaacaaaacg gcctcctgtc aggaagccgc 2100
ttttatcggg tagcctcact gcccgctttc cagtcgggaa acctgtcgtg ccagctgcat 2160
cagtgaatcg gccaacgcgc ggggagaggc ggtttgcgta ttgggagcca gggtggtttt 2220
tcttttcacc agtgagacgg gcaacagctg attgcccttc accgcctggc cctgagagag 2280
ttgcagcaag cggtccacgc tggtttgccc cagcaggcga aaatcctgtt tgatggtggt 2340
cagcggcggg atataacatg agctgtcctc ggtatcgtcg tatcccacta ccgagatgtc 2400
cgcaccaacg cgcagcccgg actcggtaat ggcacgcatt gcgcccagcg ccatctgatc 2460
gttggcaacc agcatcgcag tgggaacgat gccctcattc agcatttgca tggtttgttg 2520
aaaaccggac atggcactcc agtcgccttc ccgttccgct atcggctgaa tttgattgcg 2580
agtgagatat ttatgccagc cagccagacg cagacgcgcc gagacagaac ttaatgggcc 2640
agctaacagc gcgatttgct ggtggcccaa tgcgaccaga tgctccacgc ccagtcgcgt 2700
accgtcctca tgggagaaaa taatactgtt gatgggtgtc tggtcagaga catcaagaaa 2760
taacgccgga acattagtgc aggcagcttc cacagcaata gcatcctggt catccagcgg 2820
atagttaata atcagcccac tgacacgttg cgcgagaaga ttgtgcaccg ccgctttaca 2880
ggcttcgacg ccgcttcgtt ctaccatcga cacgaccacg ctggcaccca gttgatcggc 2940
gcgagattta atcgccgcga caatttgcga cggcgcgtgc agggccagac tggaggtggc 3000
aacgccaatc agcaacgact gtttgcccgc cagttgttgt gccacgcggt taggaatgta 3060
atteagetee gecategeeg etteeaettt tteeegegtt ttegeagaaa egtggetgge 3120
ctggttcacc acgcgggaaa cggtctgata agagacaccg gcatactctg cgacatcgta 3180
taacgttact ggtttcacat tcaccaccct gaattgactc tcttccgggc gctatcatgc 3240
cataccgcga aaggttttgc gccattcgat gctagccatg tgagcaaaag gccagcaaaa 3300
ggccaggaac cgtaaaaagg ccgcgttgct ggcgtttttc cataggctcc gccccctga 3360
cgagcatcac aaaaatcgac gctcaagtca gaggtggcga aacccgacag gactataaag 3420
ataccaggeg tttececetg gaageteect egtgegetet eetgtteega eeetgeeget 3480
taccggatac ctgtccgcct ttctcccttc gggaagcgtg gcgctttctc atagctcacg 3540
ctgtaggtat ctcagttcgg tgtaggtcgt tcgctccaag ctgggctgtg tgcacgaacc 3600
ccccgttcag cccgaccgct gcgccttatc cggtaactat cgtcttgagt ccaacccggt 3660
aagacacgac ttatcgccac tggcagcagc cactggtaac aggattagca gagcgaggta 3720
tgtaggcggt gctacagagt tcttgaagtg gtggcctaac tacggctaca ctagaagaac 3780
agtatttggt atctgcgctc tgctgtagcc agttaccttc ggaaaaagag ttggtagctc 3840
ttgatccggc aaacaaacca ccgctggtag cggtggtttt tttgtttgca agcagcagat 3900
tacgcgcaga aaaaaaggat ctcaagaaga tcctttgatc ttttctacgg ggtctgacgc 3960
tcagtggaac gaaaactcac gttaagggat tttggtcaga tctagcacca ggcgtttaag 4020
ggcaccaata actgccttaa aaaaattacg ccccgccctg ccactcatcg cagtactgtt 4080
gtaattcatt aagcattctg ccgacatgga agccatcaca aacggcatga tgaacctgaa 4140
tcgccagcgg catcagcacc ttgtcgcctt gcgtataata tttgcccata gtgaaaacgg 4200
gggcgaagaa gttgtccata ttggctacgt ttaaatcaaa actggtgaaa ctcacccagg 4260
gattggctga gacgaaaaac atattctcaa taaacccttt agggaaatag gccaggtttt 4320
caccgtaaca cgccacatct tgcgaatata tgtgtagaaa ctgccggaaa tcgtcgtggt 4380
attcactcca gagcgatgaa aacgtttcag tttgctcatg gaaaacggtg taacaagggt 4440
gaacactatc ccatatcacc agctcaccgt ctttcattgc catacggaac tccgggtgag 4500
cattcatcag gcgggcaaga atgtgaataa aggccggata aaacttgtgc ttattttct 4560
ttacqqtctt taaaaaqqcc gtaatatcca gctgaacggt ctggttatag gtacattgag 4620
caactgactg aaatgcctca aaatgttctt tacgatgcca ttgggatata tcaacggtgg 4680
tatatccagt gatttttttc tccattttag cttccttagc tcctgaaaat ctcgataact 4740
caaaaaatac gcccggtagt gatcttattt cattatggtg aaagttggaa cctcacccga 4800
cgtctaatgt gagttagctc actcattagg caccccaggc tttacacttt atgcttccgg 4860
ctcqtatqtt qtqtqqaatt qtqaqcqqat aacaatttca cacaqqaaac agctatgacc 4920
atgattacga atttctagat aacgagggca aaaaatgaaa aagacagcta tcgcgattgc 4980
agtggcactg gctggtttcg ctaccgtagc gcaggccgat
                                                                  5020
<210> 36
<211> 4145
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Vector
```



## pMORPH18\_Fab\_GPC8

<400> 36 tcagataacg agggcaaaaa atgaaaaaga cagctatcgc gattgcagtg gcactggctg 60 gtttcgctac cgtagcgcag gccgatatcg tgctgaccca gccgccttca gtgagtggcg 120 caccaggtca gcgtgtgacc atctcgtgta gcggcagcag cagcaacatt ggcagcaact 180 atgtgagctg gtaccagcag ttgcccggga cggcgccgaa actgctgatt tatgataaca 240 accagegtee etcaggegtg eeggategtt ttageggate caaaagegge accagegega 300 gccttgcgat tacgggcctg caaagcgaag acgaagcgga ttattattgc cagagctatg 360 acatgcctca ggctgtgttt ggcggcggca cgaagtttaa ccgttcttgg ccagccgaaa 420 gccgcaccga gtgtgacgct gtttccgccg agcagcgaag aattgcaggc gaacaaagcg 480 accetggtgt geetgattag egaettttat eegggageeg tgaeagtgge etggaaggea 540 gatagcagcc ccgtcaaggc gggagtggag accaccacac cctccaaaca aagcaacaac 600 aagtacgcgg ccagcagcta tctgagcctg acgcctgagc agtggaagtc ccacagaagc 660 tacagctgcc aggtcacgca tgaggggagc accgtggaaa aaaccgttgc gccgactgag 720 gcctgataag catgcgtagg agaaaataaa atgaaacaaa gcactattgc actggcactc 780 ttaccgttgc tcttcacccc tgttaccaaa gcccaggtgc aattgaaaga aagcggcccg 840 gccctggtga aaccgaccca aaccctgacc ctgacctgta ccttttccgg atttagcctg 900 tccacgtctg gcgttggcgt gggctggatt cgccagccgc ctgggaaagc cctcgagtgg 960 ctggctctga ttgattggga tgatgataag tattatagca ccagcctgaa aacgcgtctg 1020 accattagca aagatacttc gaaaaatcag gtggtgctga ctatgaccaa catggacccg 1080 gtggatacgg ccacctatta ttgcgcgcgt tctcctcgtt atcgtggtgc ttttgattat 1140 tggggccaag gcaccctggt gacggttagc tcagcgtcga ccaaaggtcc aagcgtgttt 1200 ccgctggctc cgagcagcaa aagcaccagc ggcggcacgg ctgccctggg ctgcctggtt 1260 aaagattatt tcccggaacc agtcaccgtg agctggaaca gcggggcgct gaccagcggc 1320 gtgcatacct ttccggcggt gctgcaaagc agcggcctgt atagcctgag cagcgttgtg 1380 accytyccya ycaycayctt agycactcay acctatattt ycaacytyaa ccataaaccy 1440 agcaacacca aagtggataa aaaagtggaa ccgaaaagcg aattcggggg agggagcggg 1500 agcggtgatt ttgattatga aaagatggca aacgctaata aggggggctat gaccgaaaat 1560 gccgatgaaa acgcgctaca gtctgacgct aaaggcaaac ttgattctgt cgctactgat 1620 tacggtgctg ctatcgatgg tttcattggt gacgtttccg gccttgctaa tggtaatggt 1680 gctactggtg attttgctgg ctctaattcc caaatggctc aagtcggtga cggtgataat 1740 tcacctttaa tgaataattt ccgtcaatat ttaccttccc tccctcaatc ggttgaatgt 1800 cgcccttttg tctttggcgc tggtaaacca tatgaatttt ctattgattg tgacaaaata 1860 aacttattcc gtggtgtctt tgcgtttctt ttatatgttg ccacctttat gtatgtattt 1920 tctacgtttg ctaacatact gcgtaataag gagtcttgat aagcttgacc tgtgaagtga 1980 aaaatggcgc agattgtgcg acatttttt tgtctgccgt ttaatgaaat tgtaaacgtt 2040 aatattttgt taaaattcgc gttaaatttt tgttaaatca gctcattttt taaccaatag 2100 gccgaaatcg gcaaaatccc ttataaatca aaagaataga ccgagatagg gttgagtgtt 2160 gttccagttt ggaacaagag tccactatta aagaacgtgg actccaacgt caaagggcga 2220 aaaaccgtct atcagggcga tggcccacta cgagaaccat caccctaatc aagttttttg 2280 gggtcgaggt gccgtaaagc actaaatcgg aaccctaaag ggagcccccg atttagagct 2340 tgacggggaa agccggcgaa cgtggcgaga aaggaaggga agaaagcgaa aggagcgggc 2400 gctagggcgc tggcaagtgt agcggtcacg ctgcgcgtaa ccaccacacc cgccgcgctt 2460 aatgcgccgc tacagggcgc gtgctagcca tgtgagcaaa aggccagcaa aaggccagga 2520 accgtaaaaa ggccgcgttg ctggcgtttt tccataggct ccgccccct gacgagcatc 2580 acaaaaatcg acgctcaagt cagaggtggc gaaacccgac aggactataa agataccagg 2640 cgtttccccc tggaagctcc ctcgtgcgct ctcctgttcc gaccctgccg cttaccggat 2700 acctgtccgc ctttctccct tcgggaagcg tggcgctttc tcatagctca cgctgtaggt 2760 atctcagttc ggtgtaggtc gttcgctcca agctgggctg tgtgcacgaa ccccccgttc 2820 agtccgaccg ctgcgcctta tccggtaact atcgtcttga gtccaacccg gtaagacacg 2880 acttatcgcc actggcagca gccactggta acaggattag cagagcgagg tatgtaggcg 2940 gtgctacaga gttcttgaag tggtggccta actacggcta cactagaaga acagtatttg 3000 gtatctgcgc tctgctgtag ccagttacct tcggaaaaag agttggtagc tcttgatccg 3060 gcaaacaaac caccgctggt agcggtggtt tttttgtttg caagcagcag attacgcgca 3120 gaaaaaaagg atctcaagaa gatcctttga tcttttctac ggggtctgac gctcagtgga 3180 acgaaaactc acgttaaggg attttggtca gatctagcac caggcgttta agggcaccaa 3240 taactgcctt aaaaaaatta cgccccgccc tgccactcat cgcagtactg ttgtaattca 3300 ttaagcattc tgccgacatg gaagccatca caaacggcat gatgaacctg aatcgccage 3360 ggcatcagca ccttgtcgcc ttgcgtataa tatttgccca tagtgaaaac gggggcgaag 3420

4145

```
aagttgtcca tattggctac gtttaaatca aaactggtga aactcaccca gggattggct 3480
qaqacqaaaa acatattctc aataaaccct ttagggaaat aggccaggtt ttcaccgtaa 3540
cacgccacat cttgcgaata tatgtgtaga aactgccgga aatcgtcgtg gtattcactc 3600
cagagegatg aaaacgtttc agtttgctca tggaaaacgg tgtaacaagg gtgaacacta 3660
teceatatea ecageteace gtettteatt gecataegga aeteegggtg ageatteate 3720
aggcgggcaa gaatgtgaat aaaggccgga taaaacttgt gcttattttt ctttacggtc 3780
tttaaaaagg ccgtaatatc cagctgaacg gtctggttat aggtacattg agcaactgac 3840
tgaaatgcct caaaatgttc tttacgatgc cattgggata tatcaacggt ggtatatcca 3900
gtgatttttt tctccatttt agcttcctta gctcctgaaa atctcgataa ctcaaaaaat 3960
acqcccqqta qtgatcttat ttcattatgg tgaaagttgg aacctcaccc gacgtctaat 4020
gtgagttagc tcactcatta ggcaccccag gctttacact ttatgcttcc ggctcgtatg 4080
ttgtgtggaa ttgtgagcgg ataacaattt cacacaggaa acagctatga ccatgattac 4140
gaatt
<210> 37
<211> 120
<212> PRT
<213> Homo sapiens
<400> 37
Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
                                                          15
                                      10
  1
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
             20
                                                      30
                                 25
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
         35
                                                  45
                             40
Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser
     50
                         55
                                              60
Leu Lys Thr Arq Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
                                                              80
 65
                     70
                                          75
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                 85
                                      90
                                                          95
Cys Ala Arg Gln Tyr Gly His Arg Gly Gly Phe Asp His Trp Gly Gln
            100
                                105
                                                     110
Gly Thr Leu Val Thr Val Ser Ser
                            120
        115
<210> 38
<211> 109
<212> PRT
<213> Homo sapiens
<400> 38
Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
                                                          15
                                      10
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
             20
                                                      30
                                 25
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
         35
                                                  45
```

```
Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
     50
                         55
                                              60
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
                                                              80
                                          75
 65
                     70
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Phe Asn Glu
                                                          95
                 85
Ser Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
                                 105
            100
<210> 39
<211> 118
<212> PRT
<213> Homo sapiens
<400> 39
Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
                  5
                                      10
                                                          15
  1
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
                                  25
             20
                                                      30
Ala Met Ser Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
                                                  45
         35
                              40
Ser Ala Ile Ser Gly Ser Gly Ser Thr Tyr Tyr Ala Asp Ser Val
     50
                          55
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
                                                               80
                                          75
                     70
 65
Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
                                                           95
Ala Arg Gly Tyr Gly Arg Tyr Ser Pro Asp Leu Trp Gly Gln Gly Thr
                                                     110
                                 105
            100
Leu Val Thr Val Ser Ser
        115
<210> 40
<211> 110
<212> PRT
<213> Homo sapiens
<400> 40
Asp Ile Val Leu Thr Gln Ser Pro Ala Thr Leu Ser Leu Ser Pro Gly
                                                          15
                                      10
Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser Val Ser Ser
                                                      30
                                  25
             20
Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu
         35
```



Ile Tyr Gly Ala Ser Ser Arg Ala Thr Gly Val Pro Ala Arg Phe Ser 50 60

Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Glu 65 70 75 80

Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Tyr Ser Asn Leu Pro 85 90 95

Phe Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Thr 100 105 110

<210> 41

<211> 120

<212> PRT

<213> Homo sapiens

<400> 41

Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
1 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser 20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu 35 40 45

Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser 50 55

Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val 65 70 75 80

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser 115 120

<210> 42

<211> 109

<212> PRT

<213> Homo sapiens

<400> 42

Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln 1 5 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu 35 40 45

Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser

50 55 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Met Pro Gln 85 90 95

Ala Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly 100

<210> 43

<211> 120

<212> PRT

<213> Homo sapiens

<400> 43

Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
1 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser 20 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
35 40 45

Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser 50 55 60

Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val 65 70 75 80

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
85 90 95

Cys Ala Arg Gln Leu His Tyr Arg Gly Gly Phe Asp Leu Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser 115

<210> 44

<211> 109

<212> PRT

<213> Homo sapiens

<400> 44

Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln 1 5

Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn 20 25 30

Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu 35 40 45

Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser 50 60

```
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
 65
                                          75
                      70
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Leu Thr Met
                 85
Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
                                 105
            100
<210> 45
<211> 120
<212> PRT
<213> Homo sapiens
<400> 45
Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
                                      10
                                                           15
  1
                  5
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
                                  25
                                                       30
             20
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
         35
                                                   45
Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser
     50
                          55
                                               60
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
                     70
                                          75
                                                               80
 65
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                                                           95
                 85
                                      90
Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
            100
                                 105
                                                      110
Gly Thr Leu Val Thr Val Ser Ser
                             120
        115
<210> 46
<211> 109
<212> PRT
<213> Homo sapiens
<400> 46
Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
                                      10
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
             20
                                  25
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
```

Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser

55

35

50

45

```
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
                                                               80
                                          75
 65
                     70
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Asp His
                 85
                                                           95
                                      90
Tyr Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
                                 105
            100
<210> 47
<211> 120
<212> PRT
<213> Homo sapiens
<400> 47
Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
                                                           15
                                      10
                  5
  1
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
                                                       30
                                  25
             20
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
         35
                                                   45
                              40
Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser
     50
                          55
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
                                          75 ·
                                                               80
 65
                     70
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                 85
                                                           95
                                      90
Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
                                                     110
            100
                                 105
Gly Thr Leu Val Thr Val Ser Ser
                             120
        115
<210> 48
<211> 109
<212> PRT
<213> Homo sapiens
<400> 48
Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
                                                           15
                                      10
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
             20
                                  25
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
         35
Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
     50
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
```

```
75
 65
                     70
                                                               80
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Leu Ile Arg
                 85
                                      90
His Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
                                 105
            100
<210> 49
<211> 120
<212> PRT
<213> Homo sapiens
<400> 49
Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
                                                           15
                                      10
                   5
  1
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
             20
                                  25
                                                       30
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
         35
                              40
                                                   45
Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser
     50
                          55
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
                                                               80
 65
                      70
                                          75
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                 85
                                                           95
Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
            100
                                 105
                                                      110
Gly Thr Leu Val Thr Val Ser Ser
                             120
        115
<210> 50
<211> 109
<212> PRT
<213> Homo sapiens
<400> 50
Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
                                                           15
                                      10
                  5
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
                                  25
             20
                                                       30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
         35
                              40
Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
     50
                          55
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
 65
                      70
                                          75
                                                               80
```

```
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Phe Ser Val
                                      90
                                                           95
                 85
Tyr Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
                                 105
            100
<210> 51
<211> 120
<212> PRT
<213> Homo sapiens
<400> 51
Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
                                      10
                                                           15
  1
                  5
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
             20
                                  25
                                                       30
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
         35
                                                   45
                              40
Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser
     50
                          55
                                               60
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
                                                               80
                                          75
 65
                     70
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                                                           95
                 85
                                      90
Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
                                 105
            100
                                                      110
Gly Thr Leu Val Thr Val Ser Ser
                             120
        115
<210> 52
<211> 109
<212> PRT
<213> Homo sapiens
<400> 52
Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
                                      10
                                                           15
Arg Val Thr Ile Ser Cys Ser Gly Ser Ser Ser Asn Ile Gly Ser Asn
             20
                                  25
                                                       30
Tyr Val Ser Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
         35
Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
     50
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
 65
                                          75
                                                               80
                      70
```

```
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Met Asn Val
                 85
                                                           95
                                      90
His Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
                                 105
            100
<210> 53
<211> 120
<212> PRT
<213> Homo sapiens
<400> 53
Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
                                      10
                                                           15
                  5
  1
Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
                                  25
                                                       30
             20
Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu
         35
                              40
                                                   45
Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser
     50
                          55
                                              60
Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
65
                                          75
                                                               80
                     70
Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr
                 85
                                      90
                                                           95
Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
                                 105
            100
                                                      110
Gly Thr Leu Val Thr Val Ser Ser
                             120
        115
<210> 54
<211> 109
<212> PRT
<213> Homo sapiens
<400> 54
Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
                                      10
                                                           15
Arg Val Thr Ile Ser Cys Ser Gly Ser Glu Ser Asn Ile Gly Ala Asn
             20
                                  25
                                                       30
Tyr Val Thr Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu
         35
Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser
     50
                          55
Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln
                                                               80
 65
                     70
                                          75
Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Tyr Asp His
```

90 95

Tyr Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly 100 105

<210> 55

<211> 120

<212> PRT

<213> Homo sapiens

<400> 55

Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser 20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu 35 40 45

Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser 50 55 60

Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val 65 70 75 80

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr 85 90 95

Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser 115

<210> 56

<211> 109

<212> PRT

<213> Homo sapiens

<400> 56

Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln 1 5 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Glu Ser Asn Ile Gly Asn Asn 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu 35 40 45

Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser 50 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Leu Ile Arg 85 90 95 His Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly 100

<210> 57

<211> 120

<212> PRT

<213> Homo sapiens

<400> 57

Gln Val Gln Leu Lys Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
1 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser 20 25 30

Gly Val Gly Val Gly Trp Ile Arg Gln Pro Pro Gly Lys Ala Leu Glu 35 40 45

Trp Leu Ala Leu Ile Asp Trp Asp Asp Asp Lys Tyr Tyr Ser Thr Ser 50 55 60

Leu Lys Thr Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val 65 70 75 80

Val Leu Thr Met Thr Asn Met Asp Pro Val Asp Thr Ala Thr Tyr Tyr 85 90 95

Cys Ala Arg Ser Pro Arg Tyr Arg Gly Ala Phe Asp Tyr Trp Gly Gln
100 105 110

Gly Thr Leu Val Thr Val Ser Ser 115 120

<210> 58

<211> 109

<212> PRT

<213> Homo sapiens

<400> 58

Asp Ile Val Leu Thr Gln Pro Pro Ser Val Ser Gly Ala Pro Gly Gln
1 5 10 15

Arg Val Thr Ile Ser Cys Ser Gly Ser Glu Ser Asn Ile Gly Asn Asn 20 25 30

Tyr Val Gln Trp Tyr Gln Gln Leu Pro Gly Thr Ala Pro Lys Leu Leu 35 40 45

Ile Tyr Asp Asn Asn Gln Arg Pro Ser Gly Val Pro Asp Arg Phe Ser 50 60

Gly Ser Lys Ser Gly Thr Ser Ala Ser Leu Ala Ile Thr Gly Leu Gln 65 70 75 80

Ser Glu Asp Glu Ala Asp Tyr Tyr Cys Gln Ser Tyr Asp Met Asn Val

```
His Val Phe Gly Gly Gly Thr Lys Leu Thr Val Leu Gly
            100
                                 105
<210> 59
<211> 8
<212> PRT
<213> Homo sapiens
<400> 59
Gln Ser Tyr Asp Met Pro Gln Ala
  1
                   5
<210> 60
<211> 8
<212> PRT
<213> Homo sapiens
<400> 60
Gln Ser Tyr Asp Tyr Asp His Tyr
  1
<210> 61
<211> 10
<212> PRT
<213> Homo sapiens
<400> 61
Gln Leu His Tyr Arg Gly Gly Phe Asp Leu
  1
                                      10
<210> 62
<211> 12
<212> PRT
<213> Homo sapiens
<400> 62
Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala
  1
<210> 63
<211> 8
<212> PRT
<213> Homo sapiens
```

<400> 63

Gln Ser Tyr Asp Phe Asn Glu Ser